

#5

FIG. 1A

cagaaagaga cctatatgat caaatacaga ac atg atc ttc ctc ctg cta atg	53
Met Ile Phe Leu Leu Leu Met	
1 5	
ttg agc ctg gaa ttg cag ctt cac cag ata gca gct tta ttc aca gtg	101
Leu Ser Leu Glu Leu Gln Leu His Gln Ile Ala Ala Leu Phe Thr Val	
10 15 20	
aca gtc cct aag gaa ctg tac ata ata gag cat ggc agc aat gtg acc	149
Thr Val Pro Lys Glu Leu Tyr Ile Ile Glu His Gly Ser Asn Val Thr	
25 30 35	
ctg gaa tgc aac ttt gac act gga agt cat gtg aac ctt gga gca ata	197
Leu Glu Cys Asn Phe Asp Thr Gly Ser His Val Asn Leu Gly Ala Ile	
40 45 50 55	
aca gcc agt ttg caa aag gtg gaa aat gat aca tcc cca cac cgt gaa	245
Thr Ala Ser Leu Gln Lys Val Glu Asn Asp Thr Ser Pro His Arg Glu	
60 65 70	
aga gcc act ttg ctg gag gag cag ctg ccc cta ggg aag gcc tgc ttc	293
Arg Ala Thr Leu Leu Glu Glu Gln Leu Pro Leu Gly Lys Ala Ser Phe	
75 80 85	
cac ata cct caa gtc caa gtg agg gac gaa gga cag tac caa tgc ata	341
His Ile Pro Gln Val Gln Val Arg Asp Glu Gly Gln Tyr Gln Cys Ile	
90 95 100	
atc atc tat ggg gtc gcc tgg gac tac aag tac ctg act ctg aaa gtc	389
Ile Ile Tyr Gly Val Ala Trp Asp Tyr Lys Tyr Leu Thr Leu Lys Val	
105 110 115	
aaa gct tcc tac agg aaa ata aac act cac atc cta aag gtt cca gaa	437
Lys Ala Ser Tyr Arg Lys Ile Asn Thr His Ile Leu Lys Val Pro Glu	
120 125 130 135	
aca gat gag gta gag ctc acc tgc cag gct aca ggt tat cct ctg gca	485
Thr Asp Glu Val Glu Leu Thr Cys Gln Ala Thr Gly Tyr Pro Leu Ala	
140 145 150	
gaa gta tcc tgg cca aac gtc agc gtt cct gcc aac acc agc cac tcc	533
Glu Val Ser Trp Pro Asn Val Ser Val Pro Ala Asn Thr Ser His Ser	
155 160 165	
agg acc cct gaa ggc ctc tac cag gtc acc agt gtt ctg cgc cta aag	581
Arg Thr Pro Glu Gly Leu Tyr Gln Val Thr Ser Val Leu Arg Leu Lys	
170 175 180	
cca ccc cct ggc aga aac ttc agc tgt gtg ttc tgg aat act cac gtg	629
Pro Pro Pro Gly Arg Asn Phe Ser Cys Val Phe Trp Asn Thr His Val	
185 190 195	

FIG. 1A

FIG. 1B

```

agg gaa ctt act ttg gcc agc att gac ctt caa agt cag atg gaa ccc 677
Arg Glu Leu Thr Leu Ala Ser Ile Asp Leu Gln Ser Gln Met Glu Pro
200                205                210                215

agg acc cat cca act tgg ctg ctt cac att ttc atc ccc tcc tgc atc 725
Arg Thr His Pro Thr Trp Leu Leu His Ile Phe Ile Pro Ser Cys Ile
                220                225                230

att gct ttc att ttc ata gcc aca gtg ata gcc cta aga aaa caa ctc 773
Ile Ala Phe Ile Phe Ile Ala Thr Val Ile Ala Leu Arg Lys Gln Leu
                235                240                245

tgt caa aag ctg tat tct tca aaa gac aca aca aaa aga cct gtc acc 821
Cys Gln Lys Leu Tyr Ser Ser Lys Asp Thr Thr Lys Arg Pro Val Thr
                250                255                260

aca aca aag agg gaa gtg aac agt gct atc tga acctgtgggc ttgggagcca 874
Thr Thr Lys Arg Glu Val Asn Ser Ala Ile
                265                270

gggtgacctg atatgacatc taaagaagct totggactct gaacaagaat tcggtggcct 934
gcagagcttg ccatttgcac ttttcaaagc cctttggatg acccagcact ttaatctgaa 994
acctgcaaca agactagcca acacctggcc atgaaacttg ccccttcact gatctggact 1054
cacctctgga gcctatggct ttaagcaagc actactgcac ttacagaat taccacctg 1114
gatcctggac ccacagaatt ccttcaggat ccttcttgct gccagactga aagcaaaagg 1174
aattatttcc cctcaagttt tctaagtgat ttcca 1209

```

FIG. 1B

FIG. 2A

Cd80_Human	: MCHTRQGTSPKCPINFFQILVLAGSHFCSCV...THVTK...KKEVATISG...GHNVSVELAQTR...YMOKEKKMALT...:	20	*	40	*	60	*	80	*	75
Cd86_Human	: EAVI...DM...NIWPE...IF...ITNNLSVILA RPSDEG...EVV KYEKD FKREHLAE...SKADFTPTSDFEPTS...:	20	*	40	*	60	*	80	*	60
GA16817596	: MIF...LIMIS...ELOHQ...AL...VTPV...KELY...EYGSNVT...EENFDTGSHN...GAT...ASLON...:	20	*	40	*	60	*	80	*	61
B7-H1_Huma	: MRIFAV...YMH...INA...VTPV...DKLYV...EYGSNMT...ECKFPVSKOLDIAA...IYEMEKKN...:	20	*	40	*	60	*	80	*	66
B7rp-1_Hum	: MRLGSPG...FLFSS...RADTQEK...V...AVGSI...VET...SACPEGSRRFDNDY...YVWOTSTSTY...:	20	*	40	*	60	*	80	*	62
Pro352_Hum	: MRRRGSPG...GHVGAAGWFC...TCALEVQVPE...V...ALVGT...D...TC...SFS...P...GFS...LAQL...N...IMOL...EDTK...:	20	*	40	*	60	*	80	*	74
Btf1_Human	: MESAAAHFSR...PAS...LELL...LSH...CAL...VSAQ...I...V...GPT...L...V...V...FRS...QFS...P...:	20	*	40	*	60	*	80	*	73
Btsf2a2_Hu	: MEPAAAHFS...LPAS...L...L...LSH...CAL...VSAQ...I...V...GPT...L...V...V...FRS...QFS...P...:	20	*	40	*	60	*	80	*	77
Btf4_Human	: FHSILAV...Q...L...PC...SAQSVI...CP...G...P...I...V...V...FRS...QFS...P...:	20	*	40	*	60	*	80	*	61
Btn3a3_Hum	: MKMASLAF...L...N...H...S...F...V...Q...L...T...P...C...S...A...O...F...S...V...E...G...P...S...G...I...:	20	*	40	*	60	*	80	*	74
Btn_Human	: MAVFPSSG...P...R...C...L...T...H...L...Q...P...K...I...D...S...A...P...D...V...I...G...P...P...E...I...:	20	*	40	*	60	*	80	*	72
Cd80_Human	: MMS...DM...NIWPE...IF...ITNNLSVILA RPSDEG...EVV KYEKD FKREHLAE...SKADFTPTSDFEPTS...:	100	*	120	*	140	*	160	*	180
Cd86_Human	: EAVI...DM...NIWPE...IF...ITNNLSVILA RPSDEG...EVV KYEKD FKREHLAE...SKADFTPTSDFEPTS...:	100	*	120	*	140	*	160	*	155
GA16817596	: MIF...LIMIS...ELOHQ...AL...VTPV...KELY...EYGSNVT...EENFDTGSHN...GAT...ASLON...:	100	*	120	*	140	*	160	*	138
B7-H1_Huma	: MRIFAV...YMH...INA...VTPV...DKLYV...EYGSNMT...ECKFPVSKOLDIAA...IYEMEKKN...:	100	*	120	*	140	*	160	*	134
B7rp-1_Hum	: MRLGSPG...FLFSS...RADTQEK...V...AVGSI...VET...SACPEGSRRFDNDY...YVWOTSTSTY...:	100	*	120	*	140	*	160	*	143
Pro352_Hum	: MRRRGSPG...GHVGAAGWFC...TCALEVQVPE...V...ALVGT...D...TC...SFS...P...GFS...LAQL...N...IMOL...EDTK...:	100	*	120	*	140	*	160	*	147
Btf1_Human	: MESAAAHFSR...PAS...LELL...LSH...CAL...VSAQ...I...V...GPT...L...V...V...FRS...QFS...P...:	100	*	120	*	140	*	160	*	152
Btsf2a2_Hu	: MEPAAAHFS...LPAS...L...L...LSH...CAL...VSAQ...I...V...GPT...L...V...V...FRS...QFS...P...:	100	*	120	*	140	*	160	*	153
Btf4_Human	: FHSILAV...Q...L...PC...SAQSVI...CP...G...P...I...V...V...FRS...QFS...P...:	100	*	120	*	140	*	160	*	157
Btn3a3_Hum	: MKMASLAF...L...N...H...S...F...V...Q...L...T...P...C...S...A...O...F...S...V...E...G...P...S...G...I...:	100	*	120	*	140	*	160	*	141
Btn_Human	: MAVFPSSG...P...R...C...L...T...H...L...Q...P...K...I...D...S...A...P...D...V...I...G...P...P...E...I...:	100	*	120	*	140	*	160	*	154
Cd80_Human	: NIR...R...I...TS...G...F...P...H...S...L...E...N...G...E...L...N...A...N...T...H...V...S...Q...D...P...E...T...E...V...S...K...I...D...F...N...M...T...H...S...F...M...C...I...Y...G...H...L...R...:	200	*	220	*	240	*	260	*	224
Cd86_Human	: SNITENVY...N...T...G...S...H...C...P...P...K...M...S...V...L...R...K...N...T...I...E...Y...D...G...I...M...K...S...Q...D...N...V...T...E...L...D...V...S...I...S...M...S...F...P...D...V...S...N...M...T...I...F...E...T...D...K...T...:	200	*	220	*	240	*	260	*	219
GA16817596	: ET...D...E...V...T...O...A...L...S...L...A...E...S...W...P...N...V...S...P...A...N...T...H...S...R...T...P...R...G...D...Q...V...S...V...R...I...P...P...P...G...R...N...F...S...C...A...F...W...N...T...H...:	200	*	220	*	240	*	260	*	198
B7-H1_Huma	: VDPVT...S...H...E...L...I...O...A...P...G...K...A...E...V...I...N...T...S...D...H...Q...V...L...S...G...K...T...H...N...S...K...R...E...K...L...N...I...S...R...E...N...T...T...N...E...I...F...Y...E...T...F...R...L...D...P...E...E...N...:	200	*	220	*	240	*	260	*	219
B7rp-1_Hum	: SPS...D...E...I...T...F...T...S...I...N...G...V...R...P...N...V...I...N...K...D...N...S...L...L...D...Q...A...L...Q...N...D...V...F...L...N...M...R...G...I...Y...V...S...V...I...R...I...A...R...P...S...V...I...G...C...I...E...N...V...L...L...Q...N...:	200	*	220	*	240	*	260	*	225
Pro352_Hum	: KDLRPGDT...T...H...G...S...Y...O...G...M...A...E...V...E...N...Q...G...G...V...P...L...T...G...N...V...T...E...S...Q...M...A...N...E...Q...G...I...R...D...M...H...S...V...I...R...V...L...G...A...N...G...T...Y...S...C...I...A...R...N...P...V...I...Q...:	200	*	220	*	240	*	260	*	229
Btf1_Human	: RCHEDG...G...R...E...L...S...R...W...T...H...K...P...L...T...V...W...R...D...P...Y...G...G...V...A...E...A...L...K...E...V...S...N...P...D...A...D...G...I...R...M...V...T...A...V...I...R...I...K...S...V...R...N...M...S...I...N...N...I...L...I...G...O...K...:	200	*	220	*	240	*	260	*	229
Btsf2a2_Hu	: KACEDG...S...W...E...C...I...S...G...G...W...P...E...P...L...T...V...W...R...D...P...Y...G...G...V...A...E...A...L...K...E...V...S...N...P...D...A...D...G...I...R...M...V...T...A...V...I...R...I...K...S...V...R...N...M...S...I...N...N...I...L...I...G...O...K...:	200	*	220	*	240	*	260	*	233
Btf4_Human	: KYEDG...G...H...E...R...S...T...G...W...I...Q...P...L...T...V...W...R...D...P...Y...G...G...V...A...E...A...L...K...E...V...S...N...P...D...A...D...G...I...R...M...V...T...A...V...I...R...I...K...S...V...R...N...M...S...I...N...N...I...L...I...G...O...K...:	200	*	220	*	240	*	260	*	217
Btn3a3_Hum	: KGYEDG...H...E...R...S...T...G...W...I...Q...P...L...T...V...W...R...D...P...Y...G...G...V...A...E...A...L...K...E...V...S...N...P...D...A...D...G...I...R...M...V...T...A...V...I...R...I...K...S...V...R...N...M...S...I...N...N...I...L...I...G...O...K...:	200	*	220	*	240	*	260	*	230
Btn_Human	: QVDENG...E...I...O...C...E...L...S...V...W...Y...P...E...P...Q...V...Q...M...R...T...S...K...G...E...K...F...P...S...T...S...R...N...P...D...E...G...I...T...A...A...S...V...I...R...D...T...S...T...N...V...S...Y...I...Q...N...I...L...L...G...O...K...:	200	*	220	*	240	*	260	*	228

FIG. 2B

Cd80_Human	280	300	320	340	360	288
Cd86_Human	280	300	320	340	360	306
Ga16817596	280	300	320	340	360	273
B7-H1_Huma	280	300	320	340	360	290
B7rp-1_Hum	280	300	320	340	360	302
Pro352_Hum	280	300	320	340	360	307
Btf1_Human	280	300	320	340	360	276
Btsf2a2_Hu	280	300	320	340	360	318
Btf4_Human	280	300	320	340	360	263
Btn3a3_Hum	280	300	320	340	360	313
Btn_Human	280	300	320	340	360	294
Cd80_Human	380	400	420	440	460	-
Cd86_Human	380	400	420	440	460	323
Ga16817596	380	400	420	440	460	-
B7-H1_Huma	380	400	420	440	460	-
B7rp-1_Hum	380	400	420	440	460	316
Pro352_Hum	380	400	420	440	460	-
Btf1_Human	380	400	420	440	460	392
Btsf2a2_Hu	380	400	420	440	460	-
Btf4_Human	380	400	420	440	460	405
Btn3a3_Hum	380	400	420	440	460	368
Btn_Human	380	400	420	440	460	-
Cd80_Human	480	500	520	540	-	-
Cd86_Human	480	500	520	540	-	-
Ga16817596	480	500	520	540	-	-
B7-H1_Huma	480	500	520	540	-	-
B7rp-1_Hum	480	500	520	540	-	-
Pro352_Hum	480	500	520	540	-	-
Btf1_Human	480	500	520	540	-	482
Btsf2a2_Hu	480	500	520	540	-	-
Btf4_Human	480	500	520	540	-	497
Btn3a3_Hum	480	500	520	540	-	458
Btn_Human	480	500	520	540	-	-

FIG. 2C

Cd80_Human :	560	*	580	*	600	*	620	*	...	-
Cd86_Human :									...	-
GA16817596 :									...	-
B7-H1_Huma :									...	-
B7rp-1_Hum :									...	-
Pro352_Hum :									...	-
Btfl_Human :									...	-
Btsf2a2_Hu :									...	523
Btf4_Human :									...	-
Btn3a3_Hum :									...	584
Btn_Human :									...	526

FRF.GSDDSPFICFALTGASGVMVPEEGLKLRVGVHQSL

VRRLTLEPTAIFCEIPKEVESSPDPLVPDHSLETPPLPGLANESGEPQAEVTSLLLPAHPGAEVSPSATTNQNHKLQARTEALY : 584
HICWSSGKKPITICPIADGPERVTVIANAQDLSKEIPLSPMGEESAPRDADTLHSKLIPTQPSQGAP : 526

[illegible]

ataagaagct gaattaaggt gatggcagtg gggtggaaga aaggagagcc accatgcaaa 60
aagtatccag gagggagaat taacaggact aggggatggg ccatatttgc aagatgagaa 120
atgcagaggt ctaagattct agctnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 180
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 240
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nngcataaac 300
catattttcc ccagaggagg attagtagga aaggaagctg ctggttgga agtatcttta 360
tagcagtgtc tgttcctcgg ttigtctcaag gggacagtgt gccaggaaaag tccccgtgga 420
agggcaagga agaaggggaa gttaaagcca gtggcaggtg atccaagaat cttttctggt 480
gctagagcta tgttacatgc tgtcctttca tgctctaaaa ataagagtgc tggcaagtgc 540
caggcctggt ggtgcagctt aagatgatac ctttcttgga tatatatgca tctgaataag 600
gaaggctatc ttctggtcaa gctaagggtat gccatgagca ttccctgtg gaaagcactt 660
aattctgttc ccagttgtta cctgctgtaa gatctccctt tctaaaataa aaacaagaat 720
acagctcact gaggacctta catttccctc tagctactga ctcatctctc ttctcctttt 780
tatagcactc ttcttgagag agttgcctat atttggtgcc acatctttac ccattctctt 840
ttgaacctat tcaagctttc atctgtacaa aactcaactga tactgtgctt gtcaggatca 900
tccatgacct ccatactgct aaatgcaact ctcaagagta tttggctcta ctgatcactc 960
ctttgtagca ctgtgtttta aaatataggt tttattatta tttagggtatg gtgaggccaa 1020
tatatcagga aatgactgtc gttgaaaaaa gtatgttgta ctacagatc ccaagagaag 1080
gggggcacac catgccacaa agggccacat ggggaagcac cagggtcagc caggaggtgg 1140
gtgggggggtg cgcaagatct ttattgtggt ttcaacagga agaaatgggt gaagcagggt 1200
gagtggattt aggattagct gatataaata atttcagcag gctctggggc ataggggctg 1260
tccctagtct tctgggtactt ggccctgggg tgattaaggc agttgcatag tgttggaat 1320
gtgaaagccc ccaataaatg aggcagttgt gggtatgggc tctgaaatgg gttggtttgc 1380
atttgaaagg tgtgtcatg ggcaagtgtt ttactctctc ttagagggtta gaattggcta 1440
accctgggag cggcagtcct ttcagggtca gcaaggcccc aggtgtcaaa gcatcagaat 1500
acagaaaata aaatgcatgg ataatacaca ctgccatttg cttttgtacc ctctctttca 1560
atcttctctg ctggtgaccg ctcttcacaa agatctataa atgttggaat accccatgtc 1620

FIG. 3B

tcagtccttg ggcactctct ttcctatctc tctgtaggtg atgtaatgca gatatccatg 1680
acttttaaact ttttaacactt ctgcattgat gactcctaaa tttacatctc taccccaact 1740
gcctactaaa cacctccact tggctatcta ataggcattt caaaccaaact ctacaacaaa 1800
cgtaactctt tttccctctc cttaatttgc ttctccccca gccttctcca ttttaataaa 1860
cagcatctcc attgccttag tgactcaagc cccaaactta ggaattttcc cagatttccc 1920
tctttttctc aaactatata tctagcctgt cagcagttcc cttcaggtct tttttcnnnn 1980
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2040
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2100
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2160
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2220
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2280
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2340
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2400
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2460
ctaannnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2520
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnngctc 2580
catttatatt taannnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2640
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2700
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2760
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2820
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2880
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 2940
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3000
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3060
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3120
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3180
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3240

FIG. 3C

```

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3300
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3360
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ttgtgtttta 3420
aatatatata cacacttaga cacatataac cctctttcgt atatcaatta tactttaata 3480
aagctgttgn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnctcgcca 3540
acagaccact tctcacccct actagccct ctactetaag ctatcagcat ttctgcaaac 3600
acattcctaa cggatctcac tgcttgtaat cttgccagca acctctccct ctcagcaata 3660
gtctattgcc tacaccaaag cttagtgtc tcttaatgat gtaaagagg ttctatcatt 3720
ctctgaccc aaaccctcca ctgcttttca tcacactcag agcagctctg ctgttgccctg 3780
atttagatgt atggtccaa cagatttccc ctgaagaaat gattccatgg ctgataaaag 3840
ttggaaagcc tctcagttt cagaccatta tcagattagc tgtgtgctct gtccctttcc 3900
tcaaccataa gaagtccatg gataaagaaa gcttcagagt aaaggagaaa gcatgggagg 3960
tacagcagga ccaaggtggg gcattcgag ccccccacct catcagagcc agttccctac 4020
tctccctgtc taaacctctt agtaagaggt agttcaagag aggggcaaac tcaattccag 4080
cactcaaaag cacttgacta ctttgctcag tcaactagca agtatttatt gagaatgtag 4140
ctctgttcta tggagtctta ttttcaagtg tcagactccc agacatccag tccaggtaaa 4200
gaagatggtg tccattattc atttgacaaa caaagttggg gttcaagggc cagctattga 4260
aaaaagctat ggaaagcttc atgagacgtg caggtaactg ccaatatgtg tggttcacia 4320
ggactggttc atattcagaa acggccatta gaaaaggaag aagaacttct catttggtt 4380
tataaagagt gtcttgttta ctcttaattt atatcttctc ttctccagga aatcaacct 4440
taacttctcc tccagctcc actctaccat ggtctgtcac cttcccaaaa tgatttggtta 4500
ttcccctgtt ttcaaaagtg aacaaagaac caaagacca gcaaagtttc acaaggccct 4560
gagactttca attgtctatt tcagatcaaa tacagaac atg atc ttc ctc ctg cta 4616
Met Ile Phe Leu Leu Leu 6

atg ttg agc ctg gaa ttg cag ctt cac cag ata gca ggtaagaaag 4662
Met Leu Ser Leu Glu Leu Gln Leu His Gln Ile Ala 18

gacaaagga gaggttaag aaagaagagc aggtggtggt tcctagccaa agccaaaaat 4722
gagaatgtg ccctcaggct gagggctttc tttgagagga cgtatgattt ctgggctatt 4782

```

FIG. 3C

FIG. 3D

ccaagcacca caaaaaaaaa aagagtcccc atggtggctt atacatgcc aatgccttat 4842
ctgacagaaa cggtgactga gaattattgt ccatctattc ccactatcca gtgagggtaa 4902
tgacaagaag acaggatcac tcagaccatg taaatctaaa ctgatacaag agggcagggg 4962
ttgagttccc ttaaagggtga gatgccaaag agctgtcccc ttcctttctg gcagggagag 5022
taaggagaca atggccaggg aacaccgtta ctctaaagat aatgtcttga agacattctg 5082
catattatta gttgtttctg tgagtttctt ttttgaaaag caacaatagc agccgttggt 5142
cattcatacc ttaatgtggt ttactgagtc ttcctaaaac ccaaataaac aatgaacctt 5202
aaggctatcc ctttgactt gaagaaagga cttctattgg aggatgaggg tgagcagaaa 5262
gaaaagcagt ttcacagttg gttgttctcc tggggaagg agttcagacc attcgagggg 5322
gtagttagaa ccatgagtg actattttgg atgaacacca ggagctaaga gagtaacata 5382
gaggtgtgga cagaggatta agtcctcaag acaatagccc cagcccatg ggaaatcatc 5442
tttctgctca tgattgagaa ataatggctc ccttggcact tgataacctt tcgaagagct 5502
ttctctccc tactagctgg ttccagatca ctctcacc agtcacattc ctctcactca 5562
cttgagctgc ccagcctggt ctggcactag agacatgcac ttggggccct cctcaaagga 5622
agaccctgag atattctgct tacttctact ctgctcctgc ctgcagggcc agctaaagga 5682
acttttcatg ttttctttgc aaggaacct gctggctgg catttttagag acaagcaaaa 5742
ggggcaataa cttccttgct aaaaaacagc ttcaagttc catagagtga taagggaat 5802
gagggccaaa agacactgtt cccatcctg tggcaggact gggggcttca ggagaaaact 5862
tggggaatgt gtaacctctg tgggtttgta gcttaaaaac actgagatcc tgggttttct 5922
gtctttgttt tttgcctttt ctcttaggaa aggagtgagc tagggtgaca aggggcaaca 5982
ttttttatcc ctcatgggt cttctacag aggaaggatc ttttcttcta agataatcag 6042
cacaagacaa tgaagatagg cactagctcc cagttaggta tactaatggg gcaaaaggaa 6102
gagcatttnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 6162
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnattttgca ggtgaggga ctagaactca 6222
gaaaaggtac ttaatttccc caagattaca tagttattag gtgacaccg caagatttca 6282
acaaagctaa tgcctttct actttactgt gctaccatga tgatggtaat caaaaatggc 6342
agacaacca taaatcttcc aactttggaa taggtttttg cactgaagtc tgaatatgga 6402

FIG. 3D

FIG. 3E

tacgtattga atgtttatc tggatattca cagaatcaaa aaatatgtgt aatgaattat 6462
gttgctgaat taactgaaag gaaagtaaaa atgtagcgct ttctcatttt cttcacgaat 6522
ttggaattct tttctgcttt ccactatgca gataacatca gttcagacaa atattaaata 6582
cctacctaata ttagaatgcc ttctctcat gggatttttt taaaatcttg tcatttcattg 6642
tctctttaat taaagagttt tgatttcaga ggagggtacc tgcaaaagaa aacaacaaaa 6702
aaactaaagg atctgagaaa taattagtgt ttacttctgg ggaggggagg aggtctggga 6762
tgggggtaaa aaggatagtc ttatctatta tgtatattca ggtttttgtt ttttacaaga 6822
agcatgtatt agnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnca agaaatttct 6882
catataaaaa tatgaaagta atcagactgc aacactcagt gcctgagaca gagctacagc 6942
tatcagggtg tccagacaga cagaagatta cattttcttc cttgtctctt gtacagcccc 7002
agacctgcat gcttcattga aaagaaaaga agatacctga attaaatcaa tgtgatgctt 7062
agtacctat cagtgcacat ttcttttcnn nnnnnnnnnn nnnnnnnnnn cactnnnnnn 7122
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 7182
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 7242
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 7302
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 7362
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnca 7422
cttatggcgg tattctcagt cattacaaat aaataaaaac aatccatatg ccctggagaa 7482
tttgattcca ggagtaggtc tagaagaact tcaactggag aatggataga gaaatcatgg 7542
tatatttgca gnnnnnnnnn nnnnnnnnnn nngatagca tgtgaataaa ttaattacaa 7602
aaacatatga ctacatctat tatttatatag catgtagata aattacaaaa acatgtaact 7662
acatctatga atcttagagc ataattattga gnnnnnnnnn nnnnnnnnnn nnnnnnggcc 7722
agaagataac acatagcaca atgtcctttt cataaataaa tatattgctt aagcatacct 7782
tatatataga agataaagct taaaaagtaa agaagag 7819

FIG. 3E

FIG. 4

attatcactt atgagggtgn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnctgcc 180
ctttattttt tcatgaaaga aattgctgaa gaggactaaa agaagtttta gtaagcattc 240
aataaatgta tgttctttat agtttccaaa tcagcaaata tagacatcct gcatttttaa 300
ggagatttat atattttatt ggacatgctg taattttatt aaccacttcc ctgttggtag 360
acattatttc cattttcttc tgctagatta atgcttgaaa aaaatgtgtg cctcctaaag 420
actgtgatga aagttgcctc tgaataaaaac tcaaacaaat cattaatcat taactctttc 480
cttacttgta tgctctttgg atgctctact gtgttatcta taaaataaag tttgaagtga 540
aaaattaggg taaaacattt tatatcattt ttaaaggata tatacatgga tgtacttaca 600
tatgcatggt taaatttata taccataaca tttatttctt tttttaaaaa 650

FIG. 4

FIG. 5A

tatatttgtt ttttttctta catttttatt tcaaaatcta aggacatctt ataaccaga 60
aatatttttt ataccttgtc atgtcttaga ggaaagagcc accccagtct tttttcattg 120
atgtttttct tctctcttcg tactccagag gtagatgaaa accagagggc cacaatgacc 180
atggtgatgc ctgaggcat tctggggcac agacctcagc ctaggttact ccacttcgcc 240
tatctttaga tccaaaacta ccotgctgac tgctgagata aacaaaggag aataatcagg 300
ttggggaaag gatttctatg cgaagacatg tctccatgca gtcctcctac actgagcaga 360
gcatgagtca ggtgcttaga gcaggatttt gtccataacc aggaacttca gagttttctg 420
aagaatgtgg ctatgtaaag cccccccca cccaccctt acttctcaag tacattacgt 480
ggcaagtctg aaaaaactta cacttctgtt gttaaagtgt ggggataaaa tataaactta 540
gtttcaagag gaagctatct tgggaggtaa tgcaaataat tcgttgtgtg tttcctgaat 600
aagtgcagag tgctgactac cattgatgct tcattgcaat aaaatgcaaa gctcccccaa 660
gaatttttga aatgcatcaa gctagggtgt ctaatctagc aaaaggacct gcatacatga 720
atttttcatg cttttgccaa gtcttttgcc ctttagttta gttaagggcc ccacatgaat 780
ggaaagcctg tgttgtcagc ttaattttgt agttgtggaa accttccagt tttctccttt 840
gtctaatacc ttcaggagtt caatcctagg ttgaagctta atttaataac catgtggcat 900
gtaaagtaga aaacaaaaca tcttttcctt agcatacagc aaaaaaaaaa aaaaaactca 960
ctcatggatg tagtgtacac atgccagtgg atatatagtc ataactgcag tcattggtag 1020
cacagaaata aatgtgcatt gaagacacag agannnnnnn nnnnnnnnnn nnnnnnnnnn 1080
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1140
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnngg 1200
gctagcccag tgtctgactt actgtgttta agaaatatca actattacgc tacttcccag 1260
tgacagtcca aatgcagacc agtgttataa ctctacnnnn nnnnnnnnnn nnnnnnnnnn 1320
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1380
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn aggcaaggtg 1440
gtaaaagacg cttgcacgtg caaatgttac tttgtgtaac tnnnnnnnnn nnnnnnnnnn 1500
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1560
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1620

FIG. 5B

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnct tagtgaatct aatttgcagc 1680
 tgggcttgag aaaaaacctc ttcatagaat tgtttgcac agtgtcttga ttgcctctgt 1740
 aacttacaat aagcaagaat gtttcaggat ttcaaaaatc tattgcattg cctaaacctc 1800
 ttattttgta tggagtaatc aagctcaaag ttgcatgtc ttagaaactt tacttggggc 1860
 aaaattagac caagtaacaa ttaatcttct aggtattctg agctattcag acatatgatt 1920
 catgtttgct aattgctctt ttctcttgta aatattagct gaaaaatgtc acctgtctga 1980
 caagtagcat attttatgcc tatcactcct ggcacgcatt cttacaaggc agacaggaaa 2040
 aataggaaga aaatggactt ttatcaaagg ccagggcagt aaagagggga gttctgctgt 2100
 aagctaaggg gagttccaga ggaagttata ggcgttcctt ttcttatgac aagaaagcat 2160
 agtgcagtaa ataaatttgc taaatagatt caacagtctc taccctaaagt catctattta 2220
 attcttggtt ttatgcagac tcagcaacta accttccttg taagcccat tttcttcctt 2280
 gtttcctggt tatcaaagt aattaacaa gagaagtatt atagaagagt aaaagtagta 2340
 ggtaattctt gaacttggca tatgattact acatatattga tgaatagttg aatattattc 2400
 ttcaaggaca gattggattt ggtatcaggt ggctctgcat taagttataa gggacttaat 2460
 aactcaagta ttaaggacg gcttccatca taaagggatc tgcccttaag agggtoecat 2520
 tatggagatt ctgaggtgag agctattcca agtgtgcagt ggattaaaat aaaagaatca 2580
 tacaggaaat ctctttttac atgccttatt ccaggtctt tgcaacctgg cacagcaagt 2640
 gcagatatga ttagcattgt ttacacatg tacactcacc ttatagccct gccctgtgc 2700
 cctcctgca caaaagaatg ctgggcacac gtgaactcct ctctgtagaa aggcacatta 2760
 atgttctagc catgggttaa acagggatag aggcaagcca aaaatgtcgg tcatttgaaa 2820
 taaatctcaa gtttgtgcat atcactatca agtgtgctgt gtggcaatta agaatgcca 2880
 tttgtgtgat cacaggcaag ttgcagtttg atgaaaggaa agcagaggtg aatatataac 2940
 cagggctatc cttcttttct cctctctctt cttctgtca tttatttgc aagctcttaa 3000
 ctagaacttg ctatgtgcta ggtactggat atatcaaagc aaactcagcc tggctcttgc 3060
 cttcaaagat ttgcaggata gtgggaagaa aaacttgaat cagaggacat ctgcagtggg 3120
 aatcattcaa gcagcagaaa acccaaaagt tacttatact gtgaaatctg atcagagaat 3180
 ggactgtcct ggtagtaaa atatcctgga ggataaagat tggccatgca ttccacatat 3240

FIG. 5C

gaattaccac tttcccaaga attaaaacat ggtacgaaag aaaggnnnnn nnnnnnnnnn 3300
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3360
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3420
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3480
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnna aacaacttct 3540
ggaatagcta atgcttagaa gcagctccca aatatttgtn nnnnnnnnnn nnnnnnnnnn 3600
nnnnnnnnnn nnnnnnnnnn gcaagctcta ctgaacataa tttgatctaa tcttctgtga 3660
ttattcagaa actacttcaa gattttccta tacctccatc ataatgaata cccattcatt 3720
aatgatggaa gcagccta atgtgtcattt ttcacacttt attgatgtaa cactaccttt 3780
actagtttgg ccactcctta tgcttttttt atagaactat ttagatcaat tcaactttta 3840
aaaaataaag ccacataccc ctgtggtaga tgaaaaacaa gtatcatttg cactggtaaa 3900
tagagaatag gaagaaaaat aaatgcagtg aaaataaagc agtggtatca aatcctaccc 3960
agatactgtt atctaccggg aagcttcctg tttgattaaa aggaaaaata gccagtgtta 4020
gaggtgtgga agtctagttg aaattatatg caattgaagg attaaaatag aattgaaaag 4080
ggaataaatt cctctctgaa taatttaact ccctttaggc tttgattctg cctcatctaa 4140
aatcatctta catacttcta gtggcgtgtc cctcacattt tggtaaactc tgnnnnnnnn 4200
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4260
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4320
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4380
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnccat ttttctttc cctttattgt 4440
cagaaaatag aaagcatcta cagtgggctt gtatgatgtg gtggtttagaa atacctgatc 4500
tgattnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4560
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4620
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4680
nnaccatcac tggtagagag aagtgatacc tggcacaaaa atatatggat taatcaatat 4740
ggattgaggg aaacaaacct ggagaatagg atgtgaaggt atttaagtaa catgagctca 4800
gacctgatg gtagggaagt cgaaaggaag cattttgttc ttatatgaca gatgacctgg 4860

FIG. 5D

aatgactgca gggcttgggg ggtcagggac tggaggtggg agaggcctct gagagcaagc 4920
 agtgctgtcc accagaagct cttgctgggg tgcccagaga ggagcaaagg gcagtcagct 4980
 gcacaggagg gaatgtttgg aggagagagc cacctcagat cagcgggtca agaatccac 5040
 tcttgcccag atggatgggg caaaggagaa aaaggattcg ccacgggaat gtccagataa 5100
 gacaggtgcc ttttgaaaaa tgggggtgag atgggtctca ggttacactt cgtaagaact 5160
 ggaatgtaaa gtaaaggcag acaatgacaa aatatcttgt tttcttttca gct tta 5216
 Ala Leu 20
 ttc aca gtg aca gtc cct aag gaa ctg tac ata ata gag cat ggc agc 5264
 Phe Thr Val Thr Val Pro Lys Glu Leu Tyr Ile Ile Glu His Gly Ser 36
 aat gtg acc ctg gaa tgc aac ttt gac act gga agt cat gtg aac ctt 5312
 Asn Val Thr Leu Glu Cys Asn Phe Asp Thr Gly Ser His Val Asn Leu 52
 gga gca ata aca gcc agt ttg caa aag gtg gaa aat gat aca tcc cca 5360
 Gly Ala Ile Thr Ala Ser Leu Gln Lys Val Glu Asn Asp Thr Ser Pro 68
 cac cgt gaa aga gcc act ttg ctg gag gag cag ctg ccc cta ggg aag 5408
 His Arg Glu Arg Ala Thr Leu Leu Glu Glu Gln Leu Pro Leu Gly Lys 84
 gcc tcg ttc cac ata cct caa gtc caa gtg agg gac gaa gga cag tac 5456
 Ala Ser Phe His Ile Pro Gln Val Gln Val Arg Asp Glu Gly Gln Tyr 100
 caa tgc ata atc atc tat ggg gtc gcc tgg gac tac aag tac ctg act 5504
 Gln Cys Ile Ile Ile Tyr Gly Val Ala Trp Asp Tyr Lys Tyr Leu Thr 116
 ctg aaa gtc aaa ggtgagtggg gtcaaggact agaatccatg gaagctctct 5556
 Leu Lys Val Lys 120
 ccaacagagg atctgcaagt cacagaaacc cattaaagggt agctcaagca aaaacaagca 5616
 ggctgctttt aaggagacag ctatttcaga gaaaatgaaa gcatctgctc ggaaataatt 5676
 tttgacatct gagtacaaag cagccgaagt acaagtgaaa gggggtagga cctataggaa 5736
 taaaatggga ctggaggaag ccaggaaaat tagtccttga aatgtgggag ggtatgaaaa 5796
 ataagctttg cctaattcac aattctccca tggaacatcc ctgacttgat tattaagata 5856
 ctctttttca atagtttata ccctgaatcc agagttttta aaaccatggg ttgccgcca 5916
 ttcattggatt aaaatatcaa tttagtgagt agcaaccaga tgcacgtttc ccgccttta 5976
 aaaaataatg tatagaagag aatagacaga gtagatcaga cgatatcaca gagtaggact 6036
 gagtactgta aaactaattt ctgagggacg tgtgtgtgtg tgtgcgtgtt gggcatggg 6096
 ataaattttt ttttcttac tttggatcat aaaaagttac aagtttgaa aacactgctc 6156

FIG. 5D

FIG. 5E

aaatgcaagn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 6216
 nnnnnnnnaga gtcccatgaa gtctatagct gtccctattc ctctggattc agggatctct 6276
 ccactccagc acaattgaaa atctaaatat aaagagaatc ttcacactct tgtttgttct 6336
 agaaaaggtg atttgaggaa agacatataa caactataaa aaatagattt tgcttggtca 6396
 ttggcttatg gtctccaggc ttgaatgctc tgagataaat gatgccataa tttctctggc 6456
 ctcttcccat cccacgcatt ggacctcaga tggctgtac tgtcttctag agggtttggtg 6516
 ggttttgcc ccaaaaaacc attaaccttg gcagaaagtg tgtgacttta tgatctggta 6576
 caaagaagga caaactagag ggactggaca tgaggatgaa tattgtgttc gcccttatnn 6636
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 6696
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 6756
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnaaa gaccctcagt 6816
 tgttacaggg gcagtgcct cctcacacct caaccatcaa tgagtcacca ggaaagccat 6876
 tagcctagat gtaactgttt tctatcttta ttgcatttcc tacatccagg cagcagctgg 6936
 gaggaactct agaactga agtttgtctg agttccctta atgtaaggct gtacattctc 6996
 aggatgcctt gatgtactcg aatatctgca accctaaatc accacctctg tttttattga 7056
 tctctatctg aatgctgtat taatgggcca ggccttctgc ccattctctc aaactgagaa 7116
 ctgtctctca ttctgggga ggcacctgc ctactcctta cctagatcag ggatttctca 7176
 gttgtggaga gatttggtcc ttatagtgtt ggtcatcaaa ctgggatatt tggggattac 7236
 aaagactttt caagggatgt atgggcacag gcagttttag gaagtgagtt cctagatcct 7296
 catcttcccc aaatactcgt toccaaaatt gacgagcctg acaatgtgca tgccaggcaa 7356
 ggctcttggg gttcccctaa aacacttctt cttttaagcc taccactcac tcatcatgaa 7416
 tatagtccat tgcccaggg tgtaaaaccc tctatagtgt taaataaaag aatgattggg 7476
 aacattgaca cctgatggaa ctgttatgac taaaaaccct tttgcaaata atgtggtatc 7536
 taattttctg ctttcaacaa aattgaagga ggcccttata aagttaataa ctgataatca 7596
 aaaatgagta atttttgcca tgtaaatcag gtcaaagaat gaaatggcat tgctgtaacg 7656
 aaactgcttc cattcccatt gatttactca tacgaacaag attccttagc ctttataagc 7716
 tacaaaaaaa tgaaaaatag aaatagaatt gaggctgaat tctattatat aaaatcattc 7776

[illegible]

caaccatgtc	atatgggttct	tcggattcat	gaataatttg	gaaaagagag	ccatatccat	7836
cttattaagg	gacacattcc	caataaattt	tcattcttca	tgtttaataa	ttatcaatat	7896
tcataacatt	ttacattttg	atcaaatatg	tgttaataat	aatagaaatn	nnnnnnnnnn	7956
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	8016
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	8076
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	8136
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	8196
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	8256
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	8316
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnattag	atcttaatgc	agaacaccct	8376
gaacatttaa	agcttcatag	tcacaagaga	aaagttttca	tttcaatagc	tataaatatt	8436
ttgttgttgt	aaagacatat	aacgataatc	aatacaaaat	ctgtcaaaca	aaaatatgtt	8496
acattaagat	aaaattctgt	agggaaggtg	aaattggaag	tgagtttcaa	tgaatgaaaa	8556
gaaacaattt	agacagagaa	gnnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnncttagaa	8616
ggaattgaat	agattagggt	ccttacccaa	aaagcctctg	ttatttgtct	tattttattta	8676
ttctcttttt	tcacatttct	ccagtctcat	tccccttttt	taacacagga	aattattcca	8736
gcatgtttca	tacatattct	tttgtttgta	agagcttatt	taaaatatgt	aatattgttt	8796
tagatgcata	tatttttttt	cttgtggaaa	ctatatgtga	ctatatatat	atatttttaga	8856
aatggacaca	ttannnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	8916
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	8976
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	9036
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	9096
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	9156
nnnnnnnnnn	nnnnnnnnnn	nnt				9179

FIG. 6A

tagatctcag ctttcttgag gcaggagacc atatctgttt aattcactca gcatatactg 60
 caaagaagca gnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnta 120
 gggagaagtg cagaataaat atacccaact ctttactatg tatagacatt atctaggtct 180
 ttattttttt tctcttctta atctcaaaga aaacagagga aaggaggaag taaaaagtaa 240
 atttttgcct gaagatgttt ggaaaaaata ccaaataaag tgagatagtg ggtaatctag 300
 tgatttttat ttttccgtcc tctttctggc ctccaattgt gaaataattt atagcactgt 360
 aagaaagaag ccacaaattg tggtagcttg gaccactgtt gaggnnnnnn nnnnnnnnnn 420
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 480
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 540
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 600
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn acttaatat gatagtata attttattca 660
 tttcacatgg catgaagtac caagctctat aggaatcaga aaataaagtc ttatttcttt 720
 ttctttctcta ttgtcca gct tcc tac agg aaa ata aac act cac atc cta 770
 Ala Ser Tyr Arg Lys Ile Asn Thr His Ile Leu 131
 aag gtt cca gaa aca gat gag gta gag ctc acc tgc cag gct aca ggt 818
 Lys Val Pro Glu Thr Asp Glu Val Glu Leu Thr Cys Gln Ala Thr Gly 147
 tat cct ctg gca gaa gta tcc tgg cca aac gtc agc gtt cct gcc aac 866
 Tyr Pro Leu Ala Glu Val Ser Trp Pro Asn Val Ser Val Pro Ala Asn 163
 acc agc cac tcc agg acc cct gaa ggc ctc tac cag gtc acc agt gtt 914
 Thr Ser His Ser Arg Thr Pro Glu Gly Leu Tyr Gln Val Thr Ser Val 179
 ctg cgc cta aag cca ccc cct ggc aga aac ttc agc tgt gtg ttc tgg 962
 Leu Arg Leu Lys Pro Pro Pro Gly Arg Asn Phe Ser Cys Val Phe Trp 195
 aat act cac gtg agg gaa ctt act ttg gcc agc att gac ctt caa agt 1010
 Asn Thr His Val Arg Glu Leu Thr Leu Ala Ser Ile Asp Leu Gln Ser 211
 aagagctgcc cccacttcct aggtctatca gttagggttc agacaagaaa cagatggcat 1070
 actcgagtga tttgaggaga gtgtaataaa gggactgttt acaaagggtg gatcaccatt 1130
 tggagaaact acaaaggata gtgcagaaca ctggggcttc aatggtggga gggcaattac 1190
 cactgttgga gaagttactg gaatcagaag ggagctgtag ggaaagcccc acttcccagg 1250
 agctgtagcc acagaatagg gaagctgcc catgcagcga ctccaaaggg tggaaactgg 1310
 atgaatgaat accccaactc attctcctcc caccctccaa tctcctgcta gcacctccca 1370

FIG. 6B

ttggctgaac ccagctagaa gtcagagaat acaaggggcc actgttggtat tccataaaag 1430
tcaacttctc agggctcaga gcaatattga catgtacaga atagatctgg agaggaaaca 1490
gaaaatatct agtacaatag ctaatcactg tgattcatgc acagtgtcat gagccagcag 1550
gatgaatatt cctttgctgt acttgctgcc agtcagctgg ttatggggtt ttccaagaaa 1610
tttggctctc aacaaaattc ttcagagcct ttactgacta tgctggatat ttttgggaagg 1670
gatcccatat ttttgaactt catacagcag aatttcaaac aatcttggga aaataacaac 1730
ttttatctgc ccagtaagga caactaacac ctagtatcat aatcatttcg taagagacag 1790
gtaatttcat caccgagtgc atat 1814

FIG. 7A

ctactgagaa gggatataact ctcagactaa aggacagtcc ctagtactga ttcaatctgg 60
ctttatagaa aattcactat attgtcattg tatttcacag tttgcccttt gtcttagctg 120
gtaagacaga gcctatgata aggacttgtg tggcatgcag gtatttaatt ggcaacccca 180
gagggcagaa gcaagagatt taggagttta agagagggta atataagagt atattatcaa 240
agttgtagtg tggacaacag aaactcaa atccaaggac cagcatgtag acagcctcct 300
aagatgtcta ctcagacaaa gaatttcagg tggaggact tgttcactg cttcacgccc 360
attggttgac aggaatatga actccattct gctgctgggc tagacatgca tgtgggctga 420
gtgagctttc ccagtatcc gtagcatcag aaaagtcgca gggcagaaag aaaagtatcc 480
aatttgaggt gaattactga ccttgaagt agtgtaagcc taactagaat tctacccag 540
ctggctgaag tgaaaggtga ggctgagagg aaataaggca ggactgcaca gtccccaatt 600
gtactgttca aatccactca tgcccttcat taagtcagct ctgccactga gccttcacgc 660
tgaggaggcag ccacaatctc tgcagaagat ttaatatata ccagtttgtg gaacaagctg 720
tnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 780
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 840
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 900
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 960
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1020
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1080
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1140
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1200
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1260
nnnnnnnnnn nnnnnnnnacc tgcagcactg ggatagccct ggtacagacg tagaacatgc 1320
ttgaggaggt tgtcaggagg aaatgagtta gaccttgac agaaactacca ccatcaagta 1380
cagttggggt gaggcagaca tggatagagt tgaggcatca gagatatctg atgctttatg 1440
ccaaattaaa attaatTTTT tcatggagt acactgatcc acagaccaga ctccaagaac 1500
tttgcagtga ctaaataccc atctcatcat aactttcctg gtattttctt ctggaaaaaa 1560
ttcttcctg atacagtttt cagaggcagc tagatgcact gtcactcttc cccttttccc 1620

FIG. 7B

acttccctac ctatccacaa tttactaccc aatgccaaaca ctaaagttag cccaacttcc 1680
 ttctaactaa attattagtt tagaaggaaa gagaggagtc atgctaagga tcttaactgn 1740
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1800
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1860
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 1920
 nnnnggggag aggaggggag aggaggtagg gaggggaaag aaagaaacta gaaatccatc 1980
 aatttttagga ccaacttcag gtaaaaaaat gaattaggca agttggtctt tcaacattct 2040
 ctacctctct ttatatcatg gttgagacca cagacttctc acctcatgaa agatgaactc 2100
 taactaattc atactaaagc taaagcctct aaagaggatt aaatatgagc aatcccacga 2160
 gaactttttt cccctggaat tgtttattca actgtcggtc gttatatgga atttcttgcc 2220
 tgggttaagt taggccagta ctttgatga attgtagttt tctagaaaga cgcttcttat 2280
 ataagaacct ctccaggga acaggggcct gtatgagatg aattgagaaa taactttaca 2340
 ccaactgatta tgtcagtgtt ctattctgca tggtagagat gtgaaagggc agactgacca 2400
 ttgctctgga agcctttacg ctgtgagaag ttaacagtgg agtaaaatgg ccactccact 2460
 ctcttcatgg aagccaacat ggcttactaa atagtcaaca accatgggag agacctgtgg 2520
 ggtcttcatc agagctcagg atctcctagg gtatcactca taaatacagc catcagggag 2580
 atggagaaat ctttgtgcag ccagaaattc tcaacctggt tttacccatc cttoccaaact 2640
 ttgtattogt cctactgttt actgacatgg atcctctgct tcattaacca tcccttctc 2700
 accacatgct ctctgaactt ggctgcacct tttctacctc catgccttct ttgctcaggt 2760
 ttttccacat aaatatcatt atttccctct ctactagctc caagcccacc ctctctctgg 2820
 ggcagctcag tcactccagg gcacaagggg gtctttccct catcccacat tttgagacct 2880
 actacctgga ccatttggtt gccttgtaac tatgcttgcc tttttaattg ctattttatt 2940
 ttccatgtat ttccattggt cacacaagtc ttctttattc cacactaagg caaaagcaga 3000
 gtctgtgtt cataataagt gctcaacaaa tgttgggttg attgggttg agattccatc 3060
 ttagataatc gcagtcccat catgccagct accagactgt gtggacagcc aggtcagagc 3120
 agccaaatga tattctagct tgtggcacia ataccagcaa caaataacc aaagtcacac 3180
 atctgcctct gagttcctgg cttctatttc tcaagggcat ttttaagttg tcttatgact 3240

FIG. 7B

FIG. 7C

```

gttccctttc tactcattct cataaattga gctgtggact gctgtgaccc acaagcttct 3300
ccggaagtca atgtataaaa caaacacgga aacgaagagt atggtgggtg gaggggtactc 3360
cactgactct agaatggatg actgaacatt ccaaatttca agcacaagtt agggagcaac 3420
agatcatttt ccttttgaaa tagggtttct tctgctcagc cagttgttgt attttcatta 3480
ggaaatggaa tgggactaca gcacaaaaaa taaatataaa aggacccttg tagggctggc 3540
agaaaagaga atccttccta ggagacctgg aggtgattcc aggcnnnnnn nnnnnnnnnn 3600
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3660
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3720
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3780
nnntcagaaa gtgtgcaaac agtaaaaaaa aatggtatat ctagcaagtt gcatgcctta 3840
cttgtgagtt catgaagttg tggcaaggat aagacaaata ttttttgcca ttgcatcatt 3900
atatcattgc taagagtatg ccattattnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 3960
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4020
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4080
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4140
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 4200
nnnnnnnnnn nnnnnnnnnn nnnnttaatt aattaaatta aagaaacgac aaaagagtat 4260
gcaagaattt taaaacaact tagaggaata tgtatgagga tacaggctaa gctaccataa 4320
tgaagagacc tcgaaataca gtgagaagcg agacagaagt atctttcggt ccatgtaaca 4380
ctcaggtggt tcagagcagc taagcagcta tgttccatag agtcattcag tgatccagat 4440
tattttcatc tgttgctctg ccattctcca ggatgttgtc cctataaaat tgtcaaagct 4500
cagtcagtg ccaacccatg tttcaacctt cagaaagtaa acgagtggtg gaaaacacat 4560
tcaatgtttt aaggccaaga ccttgaaaac tcactctctt agcctgaact tagattacat 4620
ggctgggccc acttaactat aggggaggct tggaaacata gtctctgaga agccatgtgt 4680
ccagctaatt ccctaatact aaagttgaaa gaaagaatgg attaaccagc agtataccac 4740
aaggtaacaa atgactagga ggatcaggct aggtggacta gaaaagagac agtcaattca 4800
gtgcaacaat tccatattga cacttttcat gtagctgttg cttggctcta tctagagagg 4860

```

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

actcagaggt	agtttagata	aggcctttgc	cctccaaata	cagtctaagc	agactgattt	4920
cctactggat	gttcaacttt	ggagtcctca	gggatgagta	gggcttctgt	acgtggaaga	4980
gactatgagg	gaacctgcac	aggacaaggg	tttgcataaa	gacactgagg	tagggacctc	5040
tcctgttggt	gggacagtga	gaggcccagg	tctccttgac	tcacaaagtg	cttactaagc	5100
acttactaga	aattaagaag	cagattataa	tcaatatggg	ttatccaatg	tttgggatgag	5160
caaggctcct	tatcttttct	tcgttaatgt	taatcacact	cttttggatg	gagacaaata	5220
tctgtggggg	ctnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	5280
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	5340
nnnnnnnnnn	nnggctcaga	ctaaataatg	tctaattctt	tctccagtaa	aacaatccgt	5400
ggttctcaga	tagcactgtg	ctggaggtag	tggggtttga	gggctgggaa	gttgggagga	5460
ctgagccctt	cccgtgagc	agtttcgtcc	agtttttctt	gtaccagcct	gtcatgttta	5520
ttccatgtga	atgactccag	aggcaaaatt	caagcttttg	aatagggcac	aaattaactt	5580
gagtaccctt	tcatttcctt	gtagggtgaac	actcctctag	ccttgccctt	tgtcagtctg	5640
gagcccttgt	tctaattctg	acacaccaga	ggactttaca	aggctttccc	cagcctccag	5700
aattattctt	ctgatccacc	ctctactaaa	ctcacccttt	cctcagtgc	aggacgttga	5760
aaaaccgaaa	caaggcaaag	ggccaattgt	aataattcac	actaaggcat	gagtgactag	5820
gtttagtata	ttaacactac	ctaggatatt	ctattttctt	caaaaggatc	ctgttaatcc	5880
ttgaaattta	acaactaatg	gtatagattc	taagcactgt	gagtacttgt	cagtggggga	5940
aagacatttt	tgggctgaga	gactttgcca	ctgnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	6000
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	aagaaagatg	attagatnnn	nnnnnnnnnn	6060
nnnnnnnnnn	nnnaaaaaat	aacatgagag	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	6120
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	6180
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	6240
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	6300
nnnnnnncaca	gagctagccg	tgttggtgt	caccactca	tgtggccagc	ctgttggtct	6360
acctcttagt	tgccatgtaa	caggattctg	gtgcttttcc	tttgcccagg	t cag atg	6417
					Gln Met	213

FIG. 7E

gaa ccc agg acc cat cca act tgg ctg ctt cac att ttc atc ccc tcc 6465
 Glu Pro Arg Thr His Pro Thr Trp Leu Leu His Ile Phe Ile Pro Ser 229

 tgc atc att gct ttc att ttc ata gcc aca gtg ata gcc cta aga aaa 6513
 Cys Ile Ile Ala Phe Ile Phe Ile Ala Thr Val Ile Ala Leu Arg Lys 245

 caa ctc tgt caa aag ctg tat tct tca aaa ggtaagtga ttttattcat 6563
 Gln Leu Cys Gln Lys Leu Tyr Ser Ser Lys 255

 ggtaacccaa tgcaactgggt gtctgcagca tgagccactg ctttgcactg caggcctatg 6623
 gcttgctgct ttcattgctaa acccactcag agcttatgaa ccactttgag cttgtcttga 6683
 tgattatttt tccccagaag aaaatggctc tcatcgctcag tgagctgaac ttcttacact 6743
 gagtttttta aagggaatgt tttgttctta tgtctgaaag agtttgtctt attctttgag 6803
 ccaagagctt tcatcagcct catgagagtgt atgttatttt ggcaatgcag agagctacgt 6863
 gctccgattt tgctgggtggg aggttgccag gatcctttct gaggattcct tccattttca 6923
 cccctctttt cccagctctg gatatgacct gggtaaacc cccccctct occaggaatc 6983
 tcaacctcac ggttgggtaa ggaaaggaga aaggtttgtg aggccatttg gggataagga 7043
 aacagctgggt tgggtgggtgca ttaacgtctt tcagcagctc ccttcgagtt tctccttagc 7103
 ctgttggtatt cttaaccaaca cactcctgtt ctgttggtacc agctgggaca gagcatgctg 7163
 aagcctttca gccctgattt cattgcttca ttgttcatgt gtctgtcttt ggtttcctgg 7223
 gtggagcctg cccacaaaac cccagaatg tatgcaggcc tagctggtgc tttcctaaac 7283
 ggctcccttg totgcactca atgaacttct ccaaagatct atacatggcc tcatctatag 7343
 aaagagaaat gacatgtgga aataattcag taggagtttg cagcagcact atctgaggac 7403
 taggggaatt ttaagtgggt gttatcttac atttatactc ataacttcta tattttcatc 7463
 tgccataaaa tattgtcatg ttctatttgt ccattgccct atgtgtgtat gtattcactt 7523
 ggggtgctgac cacaatatat ctaactgtag aatgcaagga attggtgcca aannnnnnnn 7583
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 7643
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnncttca tggtaaagga 7703
 ggaggtatgt ccaacagaac ttcgactttt aaatagaacc acttcagaga gttgtgtcag 7763
 gtgcacctca gttgtcttat ctctgtccat tcttctttta cctctcacac ccataacctca 7823
 gggttcaagg cctggggcct gaggactcct taataacttc agaaatgagc agctgagtgt 7883

FIG. 7E

FIG. 7F

tccgttccag ctgtcttttg gagaatggaa tggagtcaca ctcaaagata gagtggaaat 7943
 aaatcctctc ctcatccttc accccaatct taagagttag tgaggatata agtagctccg 8003
 agctgggagg taaagctcaa gttctaactg tgattaggag acctttctta caaataagaa 8063
 ttaagtgaat aaatgtgcaa acaatttctt ttatatTTTT aatgaaccag agagaaatca 8123
 tggttgccta tataaccctt gtctccaact cacttgcatt cagatctgct ttcttacatg 8183
 tgtctgccat gcacacaaac ttgtgtgcca tggaaaaggg ttgagaactg ctggtgatgc 8243
 agacagagct ttaaannnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 8303
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 8363
 nnnnngcagc aagagaagga acattttaca gcttattggc cgaacttcac tgccgctagt 8423
 gtggttcaac ttggactaca gagaaatctt cctaactggg ttccctgtat tcaactctgc 8483
 tacctccaac ttggtctgtt ctactttttt gctataatag gcttttaaaa atcataaatc 8543
 taccatgtgt cctctgtcca gaccttctcc atggcttctt attgctcact ggatgaagtt 8603
 ccaacgagcc caggatgggt tgactcatgt ctccagcttt aactgcata ccatcacctt 8663
 cattgtctaa agctctaacc acacaggatt ttctagtcct cagaggcatg gcagtcttct 8723
 aattccgagt tttctcatac aatattgtct cttcttaaaa tattttttct tgttgtccac 8783
 ctgagttgga gtcacttttt aaatctcagc taagcttata cttcatcaag tctttcttaa 8843
 ttctacotcc acgcaccaca ccattacat taaatcccct tattatatgt ttccatagca 8903
 cctactttct tcttttcagt atactcagca cacaatcaca tgtctaggat ctgttttaat 8963
 agcttggact accaattaaa ttgcatacct ttttaattgt cattgattcc tcaagtaccc 9023
 acatgcccac cttagcaaga agttcagtgt ctccctctta tagcatgtac ttctccacct 9083
 cccacaaact gccagaaagc ttacttagcc cacagggcca gtgctaggca gctagggttag 9143
 tctccagag ggccctgggt ttgagcagtt gctgtctact ccggccatgc agaattctctg 9203
 gtccttccag atgtctccat ccactgtgca aaggtaacct tgctgggtcc gatccccaca 9263
 cagaccacag tgctacaaga ttacagttct tatggttccc caacacatgc tctgtcattg 9323
 gtcccaaagc aggaccctta tgggttgatg aggtaggagg aggtccctgc cttagccaca 9383
 gctgcacaca gccagcctct tcccttctag gccctcatgt tgagcctggg acgccagtcc 9443
 taacttcctt ctcttcagtt cctcttaggg ccattgggtat cctgaatttc ttagtccatt 9503

FIG. 7F "cagcctt"

FIG. 7G

gcaaagttaa gtaaagaagc agcaggcttg gtccctttcc ttccagatgg cttcttagct 9563
cctgaacaga ttaccaccac tatacctcag tgactagctc tgtgtactaa agtgtattgg 9623
gagggcagcc attattggtc cataaaaggt cctgcttacc attttccctt aagaggaacc 9683
attcaacagt ttggggctcg aggggtgacct gctgggctct agagaagaag ctggcaactt 9743
ctgttgcaaa ataatgttaa attctgcttc atctgcttgt cttnnnnnnn nnnnnnnnn 9803
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnn 9863
nnnnnnnnnn nnnnnnnnnn nntaaacatt gaacctacta tatgcaggty agtatgctag 9923
atnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnn 9983
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnn 10043
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnn 10103
nnnnnnntgn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnn 10163
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnn 10223
nnnnnnnnnn nnnnnnnnga tttgaataca ggtctgtttg actccaaaac ttgtggccta 10283
tttgttgcaa aagtgcctaa taaaaattgg ttcagtcaat attattatct ttgaacaatg 10343
gaaggagaaa gtaagtttca atccaaaata attgagtgc ttatacattg acttgctgag 10403
ccaatggcaa agtcaagtta gaatccagca gaagtcacca gctacagaat ctagatcttt 10463
agaacatgtc ttcagatctt cagaacagtg tttcttaaac tctcttgtga aggaacagtt 10523
atcatcatag gctggttaaca gtccacctac cagcaccagc ccatgaacca gactctaagt 10583
ggcacagccc tagaagattg agccagaatt ttacagaggt ttaaagacca aatatgctgg 10643
tttatgggta cctgtggccc acagagaatg gcagcactaa cctcaggcat aaatgaggta 10703
cccactgaag ccaacattca agagcaattc ctatgggta accattgggc tcctttcaaa 10763
tgcaaaccct catgaaagag actacagtgc tgaatagaga cctccaaatt ccaggccaag 10823
ctcaggatag tcatgaggga attactaaaa acctgtata tagggcaaaa gcagaattag 10883
gaatggactg atttcaggaa ccagggaat ggcaggagtt gggcattaaa tcctaaaaga 10943
gaatcagagt gggagggaat atgtgaaatc agaggttaag aaaaaagtga aaacctnnnn 11003
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnn 11063
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnn 11123

FIG. 7H

```

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 11183
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 11243
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 11303
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 11363
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 11423
nnnnnnnnnn nnnnnnaaaaa attaaaagaa agatgtgaaa tcaaggaaac ttactggtga 11483
gcagcatccc attatgtgaa cttgtgcttc tgaaccagta acttgagtta ctttgagcca 11543
gtatcagtca cttatacctt agtgcaaaat taattgatca gacattctga cctggaccag 11603
ggaaggcagg cagaagtagc agtcaagact aaagcagaaa agggagagct aattctgcag 11663
ccagacattt cctggattga atacccaaat tagtccctca gcctttaagt gcctgagggc 11723
caggagtaga cagaggaatg gaaagtgtga gacttctttg ttcacactct ttgcctaggg 11783
gccagatttt gctttatgca ttaccatccg aagtcccagg ccacagtga ctttgggct 11843
tcgctatgtg gatttattta gatttacttt ttgtcctgcc atattttaat ctataagcca 11903
aacagttttc tcattaatct tattccattt ctggaatttt tccttttca gac aca aca 11961
                                     Asp Thr Thr      258

aaa aga cct gtc acc aca aca aag agg gaa gtg aac agt gct      12003
Lys Arg Pro Val Thr Thr Thr Lys Arg Glu Val Asn Ser Ala      272

gtgagtaagc atgattttta cttttctttc ttactttctt ttctctctca gcttgaattt 12063
taaagtaacc actgttctat taattcatgg aaggcaactg aatagttcca gcttatagaa 12123
tcttctgtt tggtagcatt tcagcgaagc ctggttctta gcccagaac aatcatgcca 12183
tcttttgctc ggtctatatt cctaagcact cctagatgat actgcaactg acctctggtc 12243
tcacatagtt agaaacagag ttaaaatcga acagcaaaga gaagatattc aactgcgatg 12303
caattgacaa tggatgtttt tgcaacaaac aatgattaag aagtacattg ttgtgggctc 12363
tgagtcaaga gtaatatggg aaaaacacaa gtctcttcat gaggttgaca ggtttgagc 12423
tggaatctgt ggaggaggaa ggatatgatc taggggtcag aagaagtggg ttactaaaat 12483
cattaagcct ggttgatga aaagcttaga ctcaggggaa gcagnnnnnn nnnnnnnnnn 12543
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 12603
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 12663

```

11183
 11243
 11303
 11363
 11423
 11483
 11543
 11603
 11663
 11723
 11783
 11843
 11903
 11961
 258
 12003
 272
 12063
 12123
 12183
 12243
 12303
 12363
 12423
 12483
 12543
 12603
 12663

FIG. 7I

```

nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 12723
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 12783
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 12843
nggcaccaag agatgagggg ggcagtcttg gccatatatt tggctgaagt aagtcaattt 12903
gtcattcctg catgagcctt tataaacaga agtaagtaac caactactat ttggtcattg 12963
gagttgtcca agaggccagg gttctgtcta atacctgttc atgcatgaac atgccaacct 13023
agattgcatg cagactacca gttttgggtt tttgtttagt tcagcaggat ttttctcagc 13083
tcaactgcctc tcaaaactttc agcaacaaaa ggacatctgt gatatcagaa tctaccactc 13143
taagtatttg gatgcaatag caatgaatat ctgagtaaatt ctaggtgggg agtgggggca 13203
ccctgtagcc aaaatgattt aacaaaatca aacaaaatt ttggaaatga tgccttggtg 13263
caatgaagag actacttgag gtaggtttga cttatctaatt atcttatttt ctttaccatt 13323
acctaattgag gaatttaaatt atttctagat agctttggaa aggtccctta aagaggcacc 13383
agcataccac tgccagatct aatcccccca aacactgttt tcatcatcat catgtcatct 13443
cttgtctcta tagatcatat caaatccttc ccagagtttt tcaggccttt tgacaactag 13503
ccacatttca ctaagccaac tcattctacca ctcttcaaca aaacttttcc tcaagttgag 13563
ctgtccacc aacaccactg ccattgagctc attcccactt ctgtggcttt gctcatgttg 13623
gttatttttt tggagtgtcc tcctatttcc ttcttacttg tcccaatccc aacttttggc 13683
atggtctact ttaagataca gtaatgagta actttannnn nnnnnnnnnnn nnnnnnnnnnn 13743
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 13803
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 13863
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 13923
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn tttttaaaat ttaattcaan 13983
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 14043
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 14103
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 14163
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 14223
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nntacataca 14283

```

12723
 12783
 12843
 12903
 12963
 13023
 13083
 13143
 13203
 13263
 13323
 13383
 13443
 13503
 13563
 13623
 13683
 13743
 13803
 13863
 13923
 13983
 14043
 14103
 14163
 14223
 14283

FIG. 7J

caacactctc ttgcttaatc tgtaagactc tctccccac tcataccttt ttatttttcc 14343
 tctgcattgt acacacaatc tataccactc ttaagcacat gattacagcg ttattttctg 14403
 gctgcttcta tgtgtctata ttttaggtcc acctgggtcaa tataataaag tgggatatta 14463
 gtgttaatgc aactatatgg tatttgatat ttgtctttct gtccgtttat caatgtttct 14523
 tatagnnnnn nnnnnnnnnn nnnnnnnngg tgtctgattt tgaccaaatt tgactaaata 14583
 cnnnnnnnnn nnnnnnnnnn nnnnnnnngt tgagtctatc aactcaaaaa 14643
 agaataacct acaacaataa caagtttcag aacatttttt aaattactga ttttatgagn 14703
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnngaatt ccattgccta 14763
 gaaattgccca tggttaagat tttaatattg ctcaggccca gacagctcag ggctttgaca 14823
 ttcccacacc cattctctgc catccagtt ctatctcatc ccaaaaccat ccattatgag 14883
 gagagtgtac agctctaggc tgcccgggag ccattcccgca ctctcatttt gtgactcggc 14943
 atcttgggag atggagtctt gggacttagc ctggacatgt ccottgcatg tacttcttac 15003
 aagactttta ttcagatgaa tattttccct tccaacttaa gaagcacagg gcttgctggt 15063
 tttgcttcac taaccagcaa ctgaagcaag acctgacttg tgaaaatgcc taatagagtt 15123
 cagtattage gctgtttcac catttctctg atctcttgcc tttgtgcaca tgatagaatt 15183
 gcacttctct gtgattaatt tgtagttaag tgtggtcatg taactcgctt tggtaatta 15243
 aatgtaagca taagtgatgc gtgttatttc tgggtagaag atgtaagagt tggcatatgc 15303
 tttgccatat tttctttatc catctggcat ggtaaccagt aacattctag gtagtaattg 15363
 ctccatcagt ctcagtctct gagtgactaa aattgacaga gtccctgct gaccotcaat 15423
 gtacatggaa catgaacaag aataagcttt tgttttttat attgagattt tggagttggt 15483
 tgttcctaca gcattaccta gtttactcta atacaacatg gaaaaaactg gaacctataa 15543
 taaatagacc ctacgttgcc atttaaactt ctagttctga ggaataataa tgtggggaaa 15603
 tactttctat ataataaaaa aatagaaaat tgcaaaataa aaatatactt atgtatcatt 15663
 catgtcctat taaaaatggt atttatagac tcaccatatt cccttctcc agaaaaatag 15723
 aagtaaaaat atgaaaatgc ctgtaatcat gtttttggat tatggaatca agtattgctt 15783
 tttactttta tgttttctga atttttggtg tacttcaacta catttttgag tgccctgatg 15843
 tattactttc aaaaagaaga agaatacttt ctgaagccat ttcaaccatc cccactcacc 15903

T
O
O
T
S
E
Q
U
E
N
C
E

FIG. 7K

tctctagatc ccagtaacca aatacattat ataggactct tcatcagtc tttatcaagtt 15963
taggaagggc gatgctatac cttcttttaa ggacacctac caatgtctta gttgcctttc 16023
aaagactcct agcacagcta aatgtgatgg atatgctcta aggatataag agctgaagtg 16083
acttgcataa ggtcatatca taacttactg ttagaaatgg agctagaact cagacccact 16143
gagtccttgt ctgtgacaca ctgccctttc catttgtgga agttgttctt gtatctaact 16203
ttatctgtgc tactatttgg gcctagccat tctccctctt atgcagacaa gcagataaac 16263
agtaaaactt taggagtgga ttatgatacc atagatatat atcatctatc ctttacaaaa 16323
tagttattac agtcatcaag ccttggttag agtttacaga ccatgtatcc tagctannnn 16383
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnntgaaaca 16443
gtagcagacc aaaagaagtc atgattccca gcatagtgtc nnnnnnnnnn nnnnnnnnnn 16503
nnnnnnnnnn nnnnaaacct gtattaagtt tctgttattt gcaagaccct gtcagttagg 16563
ccatgtggga actagaagga tgaatttata agtcatccaa gattcttaca attaagtatt 16623
accgataagg tactcaagaa acagttctca ttcacataat ttgggttaaa acaaaaagaa 16683
gccagctttc tatatacttt tgggtccagtc ttacgtttt ttgttttgtt ttgtttgttt 16743
tcatgagtat cccgacttcc ttctaagaac ttccacctga gaactgacca cagcgtcagc 16803
attccacatg ggtgtgtttc ctttccctt tccatttca gtgggttcca atttcttttt 16863
cttttggcac tataaacctt tcgcaaagga aatattagac agaactccta catgtcaagc 16923
aaattaaaat agtggtgaaa ttagagtgga ggacataatc accctatcat ataggctatt 16983
tgtccatata atatttgtcc ctacaaaggc ctctaaggnn nnnnnnnnnn nnnnnnnnnn 17043
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 17103
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 17163
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 17223
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 17283
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 17343
nnnnnnnnnn nnnnnnnnnn nnnctctaag ataccttgtg cttcttggaa catatttga 17403
aatcatgta gctctcaaat tatccctatg tctgaagcc caccttacca tcaatcctca 17463
gaaatacca acccatgtca ggcaacttca cactttcttt cttcaggcag cacagttgtc 17523

15963 16023 16083 16143 16203 16263 16323 16383 16443 16503 16563 16623 16683 16743 16803 16863 16923 16983 17043 17103 17163 17223 17283 17343 17403 17463 17523

[illegible]

Ile

FIG. 7M

cctcaagttt tctaagtgat ttccaaaagc agaggtgtgt ggaaatttcc agtaacagaa 19141
acagatgggt tgccaataga gttatTTTTT atctatagct tcctctgggt actagaagag 19201
gctattgaga ctatga 19217

19141
19201
19217

FIG. 8

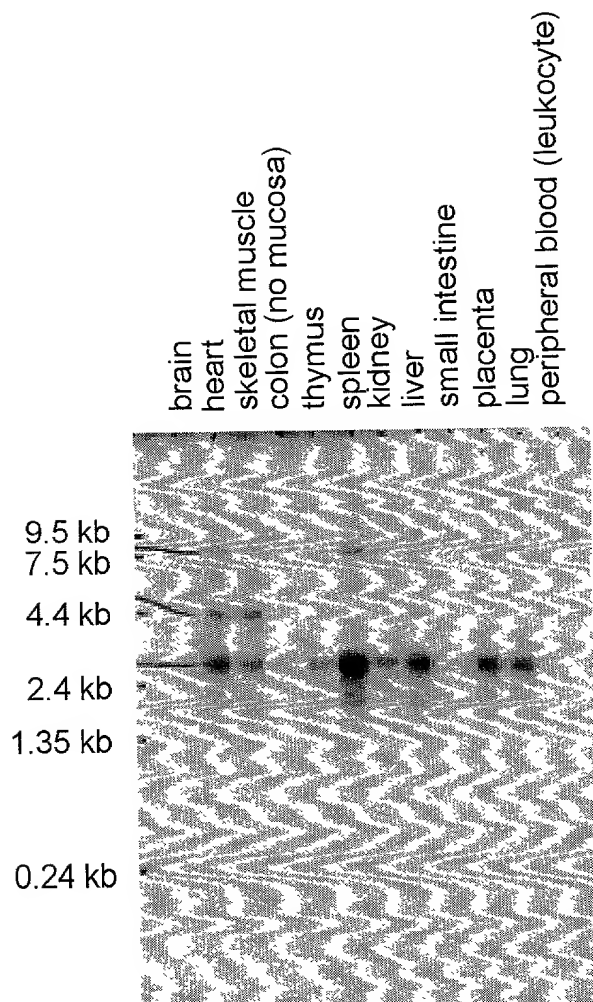


FIG. 9

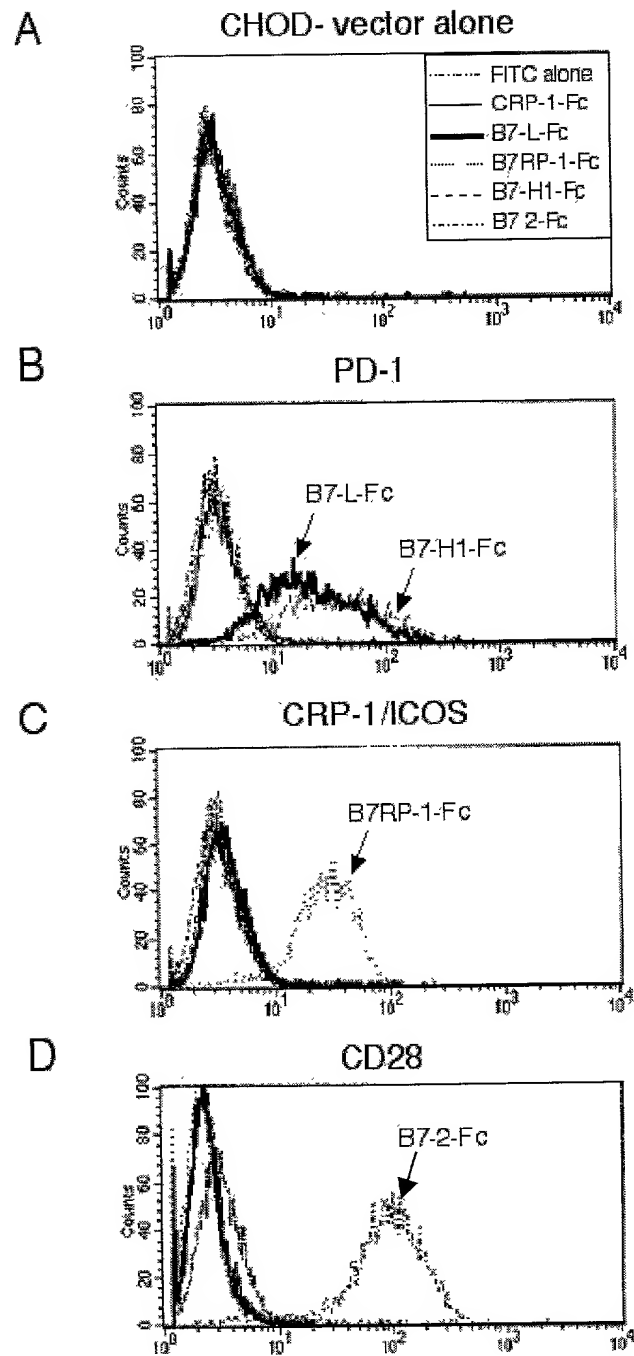


FIG. 10

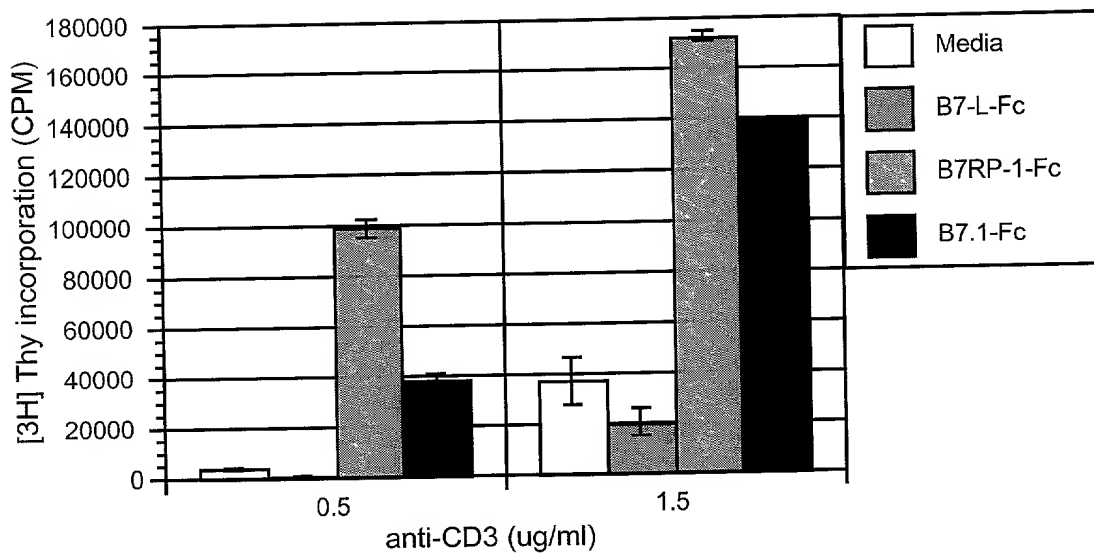


FIG. 11

